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NOTES ON CLEONUS PIGER (SCOP.) IN THE UNITED STATES (COLEOPTERA, CURCULIONIDAE)

By D. M. Anderson[1,2]

Since Crosby and Blauvelt (1930) first reported the occurrence of this large Palearctic weevil in the U. S., Brown (1940) and Hicks (1947, 1949) have reported it from Canada and the U. S., recording it at various points in Ontario, Quebec, and New York State. The attempt here is to summarize some additional information gathered on the distribution and biology of the weevil in the United States. For a very thorough description of both the immature and adult stages of this insect, the reader is referred to the work of La Ferla (1939).

Distribution

The following distribution records have been taken from material in the Cornell University Collection and in the collection of the author. NEW YORK: Allegany Co.—Belmont July 17 (D. Anderson); Cattaraugus Co.—Hinsdale June 10, June 18 & 29, July 1 & 17, Aug. 25 (D. Anderson); Erie Co.—Buffalo Sept. 16; Herkimer Co.—Herkimer Sept. 17; Onondaga Co.—Labrador Lake Sept. 19 (H. Dietrich); Ontario Co.—Geneva June 5 (H. Glasgow); Oswego Co.—Minetto Apr. 25 (L. D. Newsom), Oswego Apr. 28 (Z. P. Zoisch); Schoharie Co.—Cobleskill June (L. P. Kelsey); Tompkins Co.—Ithaca Apr. 26 (G. E. Ball), May 21, July 30, Sept. 10 (D. Anderson), Sept. 12 (H. Dietrich), Sept. 20.

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[2]The author wishes to express his thanks to Dr. C. E. Palm, Dept. of Entomology, Cornell University, for his advice and for taking the photographs, and to Dr. J. G. Franclemont, Dept. of Entomology, Cornell U., for suggestions concerning the manuscript. The expense of publishing the illustrations in this paper was paid in part by the Griswold Fund of the Dept. of Entomology, Cornell University.

Oct. 3, Nov. 3 (D. Anderson); Wayne Co.—Clyde Apr. 30; Yates Co.—Penn Yan Nov. 15 (H. Dietrich). PENNSYLVANIA: McKean Co.—Bradford July 17 (D. Anderson).

The earliest record known to the author is the Clyde N. Y. record—Apr. 30, 1919. Field searches by the author have not revealed the presence of *C. piger* in southern Pennsylvania, in southern New Jersey, or in central Maryland.

Biology

Two plant species, *Cirsium arvense* (L.) Scop. (Canada thistle) and *Cirsium vulgare* Airy-Shaw (bull thistle)[3], have been found to serve as hosts to *Cleonus piger* in the United States. Several other Composites have been recorded as hosts in Europe by such workers as Bargagli (1883) and Kleine (1910). According to Jablonowski (1909) the weevil attacks *Beta vulgaris* L. to a limited extent. La Ferla (1939) describes the infestation of the cultivated artichoke, *Cynara cardunculus* L., by *C. piger*.

From field observations made during and since the summer of 1951 at Ithaca, N. Y. and at Hinsdale, N. Y., it appears that the general life-history of the weevil, in New York State, is as related in this and subsequent paragraphs. The adult weevils, which overwinter in debris and under various objects on the ground, become active sometime in May, and by early June they may be found on the thistles. From early June until late July, the adults, which feed on the foliage of the thistles, engage in copulation and oviposition. The female lays her eggs singly in the lower portion of thistle stems by chewing a cavity in the stem, depositing an egg in the cavity, and then plugging the hole with frass. After hatching, the larva bores downward through the stem and into the root, where it feeds on the internal tissues of the primary root, for about 30 days in the few observed instances, until it is fully developed and ready to pupate (see Figs. 2 & 3). The infested part of the root usually undergoes a marked thickening and may resemble a spindle-shaped gall, as described by van Leeuwen (1953).

The pupal cell is formed within the root by the cavity which results from the feeding of the larva and which the larva packs at both ends with frass and chewings (see Fig. 4). After an undetermined length of time the transformation from the pupa to the adult form takes place, and the adult weevil emerges sometime in August or September. It should be noted here that the author has been unable to find any adult *C. piger*

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[3]The identification of this species was affirmed by Dr. R. T. Clausen, Prof. of Botany, Cornell University.

on thistles during early August. Adults were found feeding on thistle as late as Nov. 3 at Ithaca in 1953, and it is possible that most of these had emerged in the late summer and early autumn of that year.

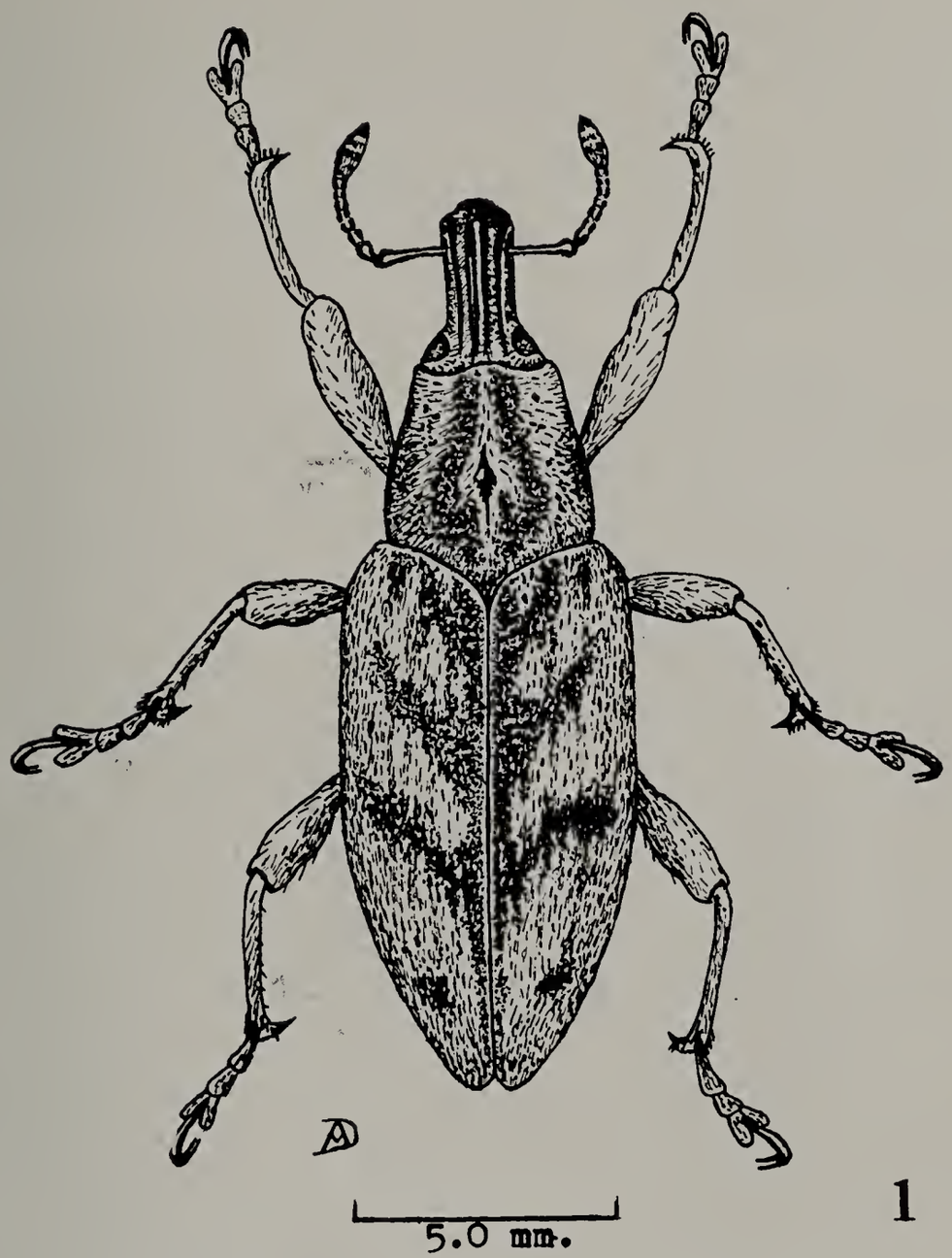

Fig. 1—Cleonus piger, female (dorsal view).

Pupae have been taken from thistle roots as early as July 21 at Hinsdale in 1952 and as late as August 13 at Ithaca in 1954.

Numerous larvae in various stages of maturity have been taken in the field from late June until early August, but no information concerning the number and duration of the larval instars has been obtained.

In a rearing experiment begun at Hinsdale on July 26, 1953, first-instar larvae hatched from eggs laid by captive females were inserted into the lower portions of the stems of nine young Canada thistle plants which had been potted and carefully inspected for signs of infestation.

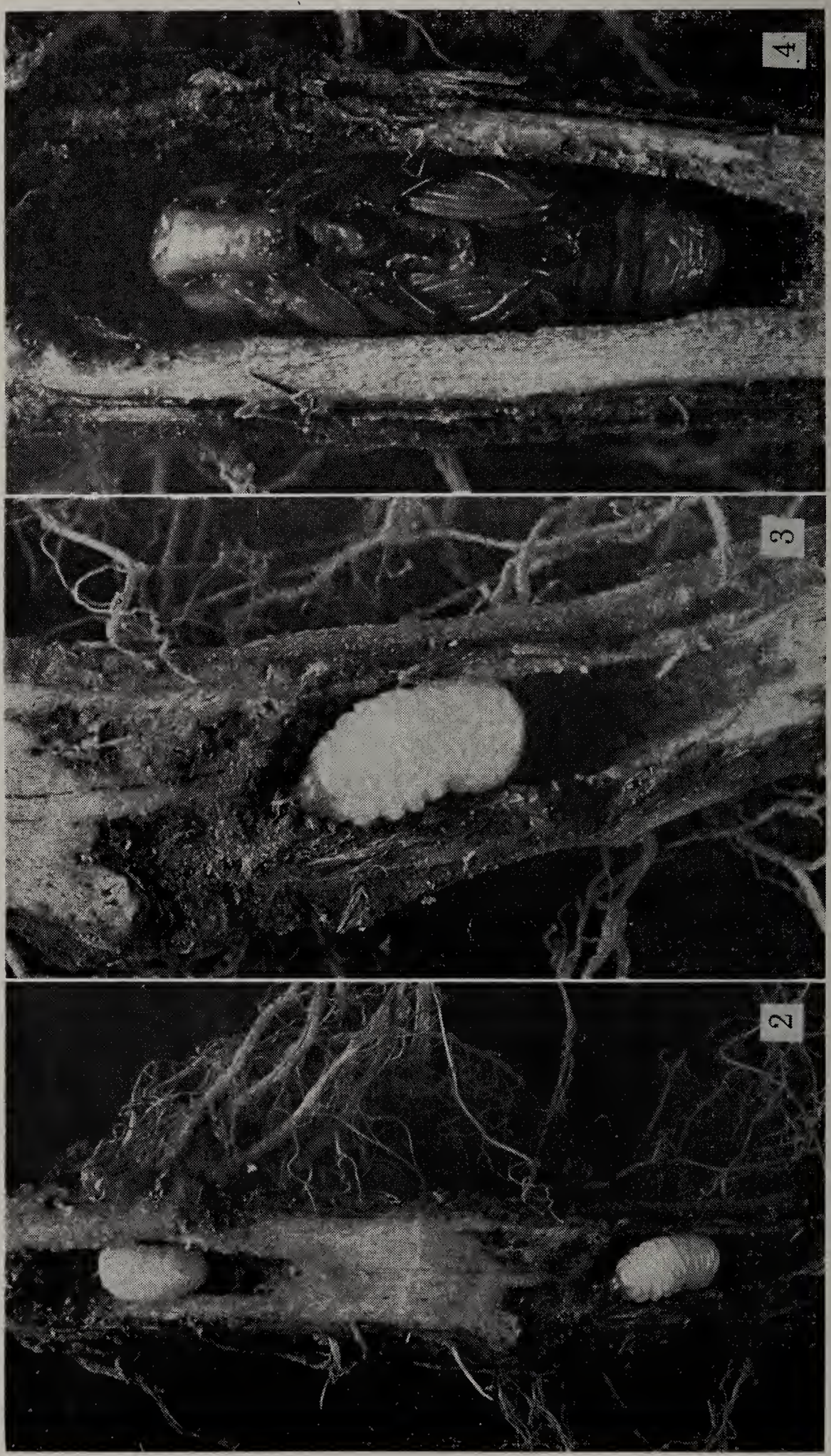

Fig. 2—A Canada thistle root cut open longitudinally, exposing two **C. piger** larvae. Fig. 3—A closer view of the lower of the two larvae shown in Fig. 2. Fig. 4—A pupa, shown in its normal position in the root.

When the roots of the thistles were examined on August 30, two of the plants each contained a pupa and a late-instar larva was discovered in the root of a third plant. The roots of all three plants exhibited the usual thickening in the infested region.

It is hoped that future investigation will result in a more complete understanding of the distribution and biology of *C. piger* as it occurs in North America. Among other things, it is not known whether or not the adults are able to fly. The wings appear to be fully developed, and the elytra are not fused, but the writer has never observed the weevils in flight.

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Recently Published

A REVISION OF THE GYRINIDAE (COLEOPTERA) OF THE ETHIOPIAN REGION. I.

By Per Brinck. Kungl. Fysiografiska Salliskapets Handlingar, N. F. Bd. 66, No. 16, pp. 1-140, 52 text figs., many of them compound. Lund, 1955. Price kr. 14.

This first part deals with two of the three subfamilies of Gyrinidae, the Gyrininae and Enhydrinae. A new tribe, Heterogyrini, is proposed for *Heterogyrus milloti* Legros from Madagascar. Four new subgenera are described in *Aulonogyrus*: *Paragyrus* (monotypic, *A. goudoti* Rég.), *Lophogyrus* (2 spp., type *A. carinipennis* Rég.), *Pterygyrus* (monotypic, *A. elegantissimus* Rég.), and *Afrogyrus* (many spp., type *G. caffer* Aubé).

Of interest to American workers is the discussion of the subgenera of *Dineutus*, with a new key to the subgenera of the world. Of importance to all students of the family are the sections on "Morphological structures of taxonomic value" (pp. 6-12, 4 figs.), and Brinck's basic restudy, "The gyrinid genitalia" (pp. 13-36, 17 figs.).—H. B. Leech, *California Academy of Sciences.*